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=> s soybean(w) germ  
      12761 SOYBEAN  
      1755 GERM  
L1      .      5 SOYBEAN (W) GERM
```

=> d 11 all 1-5

L1 ANSWER 1 OF 5 FSTA COPYRIGHT 2003 IFIS
AN 2003:J1770 FSTA
TI Method for the production of germ-enriched soybean material.
IN Shidou, Y.; Honda, M.; Nakatani, A.; Nakata, Y.; Ueno, M.; Ishida, H.
PA Ajinomoto Co. Inc.; Ajinomoto, Japan
SO Canadian Patent Application, (2002)
PI CA 2358210 A1
PRAI JP 2000-307046 20001006
DT Patent
LA English
AB A method for the production of soybean material with a high germ concn. (35-80 wt.%) is described. The germ is completely removed from the crudely crushed soybean cotyledon from which foreign substances have been removed. The **soybean germ** fraction is separated by a sieve with an opening of 0.5-1.4 mm and with a ratio of length to width of .gt; or = 2. Oil and fat obtained from the soy product, an isoflavone-rich product, food containing this oil or fat and an agent for lowering cholesterol are also described.
CC J (Fruits, Vegetables and Nuts)

CT COMMINUTION; FATS VEGETABLE; GERM; OILS VEGETABLE; PATENTS; SIEVING; SOY PRODUCTS; CRUSHING; VEGETABLE FATS; VEGETABLE OILS

L1 ANSWER 2 OF 5 FSTA COPYRIGHT 2003 IFIS

AN 2002:J2276 FSTA

TI Method for the production of germ-enriched soybean material.

IN Ishida, H.; Ueno, M.; Nakata, Y.; Nakatani, A.; Honda, M.; Shidou, Y.

PA Ajinomoto Co. Inc.; Ajinomoto, Chuo-ku, Japan

SO United States Patent Application Publication, (2002)

PI US 2002081365 A1

PRAI JP 2000-307046 20001006

DT Patent

LA English

AB A method for the production of a soybean product with a germ concn. of 35-80 wt.% is described consisting of: crudely crushing soybean material or seeds, from which foreign material has been removed; and separating and concentrating the **soybean germ** fraction after sieving (hole diam. 0.5-1.4 mm). The resulting product can be used to produce an isoflavone rich food, or incorporated into a food to lower cholesterol.

CC J (Fruits, Vegetables and Nuts)

CT FLAVONOIDS; GERM; PATENTS; SOY PRODUCTS; ISOFLAVONES

L1 ANSWER 3 OF 5 FSTA COPYRIGHT 2003 IFIS

AN 2001(12):N0937 FSTA

TI Effects of **soybean-germ** oil on reducing serum cholesterol level.

AU Sato, H.; Ito, K.; Sakai, K.; Morinaga, Y.; Sukegawa, E.; Kitamura, T.; Shimasaki, H.; Itakura, H.

CS Food Res. & Dev. Lab., Ajinomoto Co. Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-8681, Japan

SO Journal of Oleo Science, (2001), 50 (8) 649-655, 18 ref.
ISSN: 1345-8957

DT Journal

LA English

AB **Soybean-germ** oil was extracted from hypocotyl-enriched soybean raw material and found to contain 4x as much phytosterol as soybean oil. The hypocholesterolaemic activity of this phytosterol-rich oil was evaluated. 91 healthy male volunteers, average age 44 yr (s.d. = 10) and serum total cholesterol (TC) levels <260 mg/dl, consumed 2 eggs per day for 3 wk. Serum TC increased in 39 subjects (.gtoreq.10 mg/dl). 30 of the subjects with TC >180 mg/dl were divided into 3 groups. These consumed a test food together with 2 eggs every day for another 3 wk. The test food was mayonnaise containing 22 g of cooking oil (22 g **soybean-germ** oil, 11 g **soybean-germ** oil + 11 g safflower oil or 22 g safflower oil). Serum TC and low density lipoprotein (LDL)-cholesterol (LDL-C) increased in the 22 g safflower oil per day control group; however, the increase in serum TC and LDL-C was decreased in the 11 or 22 g **soybean-germ** oil per day groups. Serum TC and LDL-C differed significantly in the **soybean-germ** oil and control groups. Daily intake of **soybean-germ** oil thus appears effective for reducing serum TC and LDL-C levels.

CC N (Fats, Oils and Margarine)

CT HEALTH; SOYBEAN OILS; HYPOLIPAEMIC ACTIVITY

L1 ANSWER 4 OF 5 FSTA COPYRIGHT 2003 IFIS

AN 2001(08):N0671 FSTA

TI Chemical composition of soybean oil extracted from hypocotyle-enriched soybean raw material and its cholesterol lowering effects in rats.

AU Ozawa, Y.; Sato, H.; Nakatani, A.; Mori, O.; Hara, Y.; Nakada, Y.; Akiyama, Y.; Morinaga, Y.

CS Food Res. & Dev. Lab., Ajinomoto Co. Inc., 1-1 Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-8681, Japan

SO Journal of Oleo Science, (2001), 50 (4) 217-223, 24 ref.

ISSN: 1345-8957
DT Journal
LA English
AB Soybean oil (termed **soybean-germ** oil to distinguish it from normal soybean oil) was extracted from hypocotyle-enriched (37%) raw soybeans and its chemical composition was analysed. The total sterol content in **soybean-germ** oil was 1.7% which is higher than that in soybean oil (0.4%), corn oil (1.1%) and rice bran oil (1.0%). The ratio of campesterol to total sterols in **soybean-germ** oil was 8.1%, lower than that of soybean oil (20.2%), corn oil (20.5%) and rice bran oil (15.7%). The sum of .DELTA.7-stigmasterol, .DELTA.7-avenasterol and citrostadienol on **soybean-germ** oil was 517 mg/100 g, higher than that in corn oil (30 mg) and rice bran oil (230 mg). The cholesterol lowering effects of **soybean-germ** oil in rats were also evaluated. In rats fed test feeds containing 0.5% cholesterol and 10% test oils, the increases in serum and liver cholesterol levels were suppressed to a greater extent in rats fed **soybean-germ** oil than in those fed soybean oil. It is suggested that the higher sterol content in **soybean-germ** oil may contribute to its enhanced cholesterol lowering effects.
CC N (Fats, Oils and Margarine)
CT CHOLESTEROL; SOYBEAN OILS; STEROLS; ANIMAL MODELS; COMPOSITION

L1 ANSWER 5 OF 5 FSTA COPYRIGHT 2003 IFIS
AN 1982(08):G0534 FSTA
TI [Method for making food and drink or feeds.]
PA Nissin Oil Mills KK
SO Japanese Examined Patent, (1981)
PI JP 5639176
DT Patent
LA Japanese
AB Concentrated **soybean germ** containing .1toreq.12% fibrous substances is subjected to heat treatment; the resultant product can be incorporated into a foodstuff.
CC G (Catering, Speciality and Multicomponent Foods)
CT BEVERAGES; CONCENTRATION; FIBRE; GERM; PATENTS; SOY PRODUCTS; FOODS; HEATED FIBRE-LOW; PATENT; SOY; SOY GERM BEVERAGES; SOY GERM FOODS

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FILE COVERS 1907 - 25 Jun 2003 VOL 138 ISS 26
FILE LAST UPDATED: 24 Jun 2003 (20030624/ED)

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=> s soybean (w) germ
91495 SOYBEAN
32264 GERM
L2 37 SOYBEAN (W) GERM

=> d 12 cbib,ab 1-37

L2 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2003 ACS

2003:413857 Lipstick compositions containing waxes and oils. Light, Orrea (USA). U.S. Pat. Appl. Publ. US 20030099604 A1 20030529, 6 pp. (English). CODEN: USXXCO. APPLICATION: US 2002-299392 20021119. PRIORITY: US 2001-PV331684 20011119.

AB A lipstick compn. is described that overcomes the dry and waxy feel of lipstick, that applies softly, does not drag upon application, and leaves the lips of wearers feeling comfortable and protected against cracking and dryness. Thus, a formulation contained propylparaben 0.5-0.22, PEG/tocopherol/ascorbyl palmitate/ascorbic acid and citric acid 0.01-0.15, castor oil 15-55, caprylic/capric triglyceride 5-25, Candelilla wax 4-20, octyldodecyl stearoyl stearate 4-15, polybutene 4-15, canola oil/**soybean germ** ext./corn starch/silica 4-15, microcryst. wax 2-9, hydroxylated lanolin 2-6, Ozokerite 1.3-4, paraffin 1.3-4, Safflower oil/Aleurites moluccana seed ext./0.01-0.25, Safflower oil/cranberry fruit ext. 0.01-0.25, Safflower oil/Avocado fruit ext. 0.01-0.25, talc 1.3-3, lauroyllysine 0.01-0.20, Calophyllum inophyllum seed oil 0.80-2.5, Prunus domestica seed ext. 0.80-2.5, flavor/fragrance 0-0.50, mica and iron oxides and TiO₂, org. pigments and lakes 0-25%.

L2 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:873552 Document No. 137:351989 Promotion of egg production by feeding poultry with isoflavone aglycon-rich feed and eggs produced by the method. Takebe, Minoru (Nichimo K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2002330707 A2 20021119, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-135515 20010502.

AB Egg-laying is promoted by feeding poultry with feed contg. isoflavon aglycon-rich hydrolyzates manufd. by inoculating germs of legumes with koji mold and hydrolyzing the koji. The feed prevents decreases in egg prodn. rate, egg shell thickness, egg shell strength, transfer of carotenoids into egg yolk in last stage of egg-laying. Administration of feed contg. **soybean germ** fermented with koji mold to white leghorn hens increased egg prodn. rate from 78.6% during 1-2 wk to 83.6% during 3-4 wk.

L2 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:849766 Document No. 137:324555 Sterol compositions and fat compositions containing the same and foods. Tashima, Ikukazu; Ishizaki, Taichi; Mori, Osamu; Baba, Emi; Hara, Yoshiko; Yamada, Keiko; Sato, Hitoshi (Ajinomoto Co., Inc., Japan). PCT Int. Appl. WO 2002088286 A1 20021107, 21 pp.

DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.

APPLICATION: WO 2002-JP4108 20020424. PRIORITY: JP 2001-132518 20010427.

AB Sterol compns. have total sterol content .gtoreq.70% and .DELTA.7 sterol content .gtoreq.13% (vs. the total sterol). Thus, from **soybean germ**, a sterol compn. having purity 85.4%, .DELTA.7 sterols 25.8%, and free sterols 99% was prep'd.

L2 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:717308 Document No. 137:369316 Hydrolysis of isoflavone glycosides to aglycones by .beta.-glycosidase does not alter plasma and urine isoflavone pharmacokinetics in postmenopausal women. Richelle, Myriam; Pridmore-Merten, Sylvie; Bodenstab, Stefan; Enslen, Marc; Offord, Elizabeth A. (Department of Nutrition, Nestle Research Center, Lausanne, Switz.). Journal of Nutrition, 132(9), 2587-2592 (English) 2002. CODEN: JONUAI. ISSN: 0022-3166. Publisher: American Society for Nutritional Sciences.

AB The effects of enzymic hydrolysis of glycosides to aglycons before consumption of nonfermented soybean foods on isoflavones bioavailability were studied in 6 European postmenopausal women. Two drinks were formulated with enriched isoflavone ext. from **soybean germ** (Fujiflavone P10), one of which was hydrolyzed enzymically with .beta.-glucosidase to produce aglycons. The women consumed each soybean drink 1 wk apart at 1 mg total isoflavones/kg body wt. The blood plasma and urinary pharmacokinetics of daidzein, genistein, and glycinein did not differ after the consumption of the 2 beverages. Plasma total isoflavone concns. reached 4-5 .mu.mol/L. The pharmacokinetics of glycinein was similar to that of daidzein. The main isoflavone secondary metabolites detected were dihydrodaidzein in blood plasma and O-desmethylangolensin, equol, 6'-hydroxy-O-desmethylangolensin (6-ODMA), and dihydrogenistein in urine. The ratios of individual isoflavones were not preserved from food to plasma to urine, indicating that the individual isoflavones do not have the same absorption and body retention. Thus, preliminary hydrolysis of glycosides to aglycons does not enhance the bioavailability of soybean isoflavones in humans.

L2 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:308865 Document No. 137:179102 GC-MS analysis of the extract from degreased **soybean germ** with methanol. Gu, Xiaohua; Xiong, Yuchun; Zong, Zhimin; Wang, Xiaohua; Wei, Xianyong (School of Chemical Engineering, China University of Mining and Technology, Xuzhou, 221008, Peop. Rep. China). Tianran Chanwu Yanjiu Yu Kaifa, 14(1), 45-47 (Chinese) 2002. CODEN: TCYKE5. ISSN: 1001-6880. Publisher: Tianran Chanwu Yanjiu Yu Kaifa Bianjibu.

AB The ext. from degreased **soybean germ** using methanol was analyzed by GC-MS. The results showed that the ext. mainly consisted of fatty acids and their esters, among which unsatd. fatty acids were more abundant than satd. fatty acids. In addn., small amts. of long-chain alkanes were also detected.

L2 ANSWER 6 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:76218 Document No. 136:85129 Stress releasing drink containing rose extract. Cho, Won Ki; Choi, Jin Ho; Kim, Dong Woo (S. Korea). Repub. Korean Kongkiae Taeho Kongbo KR 2000021322 A 20000425, No pp. given (Korean). CODEN: KRXXA7. APPLICATION: KR 1998-40338 19980928.

AB A stress releasing drink contg. rose ext. which can reduce MHPG-SO₄ and corticosterone which are increased by phys. and psychol. stress is provided by inhibiting the formation of activated oxygens effectively, such as superoxide radical or hydroxy radical which stimulate aging. A stress releasing drink is comprised of 0.1% or 0.5% of rose concs. prep'd. by condensing a rose fruit ext. in vacuum condition, extd. with ethanol/1,3-butyleneglycol/purified water in the ratio of 7/1/3(vol./vol./vol.) added with each ext. of **soybean germ**, bamboo shoots and oak mushroom in 0.05 hundred parts by wt., resp., 0.03 of ginger ext., asparagine, arginine, taurine, calcium lactate and sodium benzoate in 0.05, resp., vitamin C, B1 and B6 in 0.03, resp., citric acid in 0.07, sorbitol in 0.5, potassium iodide in 0.0002, sugar in 2.5, fructose in 4.5, and 5.0% of grape ext. The drink is produced by mixing the ingredients, centrifuging the mixt. at 1000 multiply with gram for 10 min, and collecting the supernatant to make a stress releasing drink. By administering a drink contg. 0.1% of the rose exts., MHPG-SO₄ and corticosterone were reduced by 17% and 25%, resp., thereby the result

demonstrates the ability of the drink to release the socio-psychol. stress.

L2 ANSWER 7 OF 37 CAPLUS COPYRIGHT 2003 ACS

2002:51449 Document No. 136:107542 Obesity inhibitory materials containing isoflavones. Takebe, Minoru (Nichimo Co., Ltd., Japan). PCT Int. Appl. WO 2002004437 A1 20020117, 57 pp. DESIGNATED STATES: W: AT, AU, CA, CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2001-JP5944 20010709. PRIORITY: JP 2000-207422 20000707.

AB Disclosed are obesity inhibitory materials which are absorbed in the body via oral administration or dripping and affect causes of overeating. Thus, they can regulate food intake and thus promote the metab. of lipids and inhibit the accumulation of body fat without suppressing immune functions. At the same time, they can inhibit an increase in blood pressure, thereby surely inhibiting body wt. gain (obesity). Such obesity inhibitory materials have never been reported hitherto. These obesity inhibitory materials having the above-described excellent effects are largely characterized by contg. isoflavone aglycons and/or isoflavone glycosides. The antiobesity effect of isoflavones obtained by koji fermn. and extn. of soybean germ was examd. in rats.

L2 ANSWER 8 OF 37 CAPLUS COPYRIGHT 2003 ACS

2001:555540 Document No. 135:256605 Effects of soybean-germ oil on reducing serum cholesterol level. Sato, Hitoshi; Ito, Kazuko; Sakai, Keiichi; Morinaga, Yasushi; Sukegawa, Eiji; Kitamura, Takehiko; Shimasaki, Hiroyuki; Itakura, Hiroshige (Food Research & Development Lab., Ajinomoto Co., Inc., Japan). Journal of Oleo Science, 50(8), 649-656 (English) 2001. CODEN: JOSOAP. ISSN: 1345-8957. Publisher: Japan Oil Chemists' Society.

AB Soybean-germ oil was extd. from hypocotyl enriched soybean raw material and was found to contain 4 times as much phytosterol as soybean oil. Its capacity for cholesterol diminishing effects in human was evaluated. Ninety-one healthy male volunteers, av. age 44 (SD10), and serum total cholesterol (TC) below 260 mg/dL, were made to consume two eggs per day for 3 wk. Serum TC increased in 39 subjects (.gtoreq.10 mg/dL) due to this consumption. Thirty of the subjects with TC above 180 mg/dL were divided into 3 groups which consumed test food with two eggs everyday for another 3 wk. The test food was mayonnaise contg. 22 g cooking oil. The test groups were (i) 22 g Soybean-germ oil, (ii) 11 g Safflower oil and (iii) 22 g Safflower oil. Serum TC and LDL-cholesterol (LDL-C) increased in the 22 g Safflower oil per day control group. Increase in serum TC and LDL-C was noted to decrease in the 11 g or 22 g Soybean-germ oil per day group. Serum TC and LDL-C differed significantly in the Soybean-germ oil intake and control groups. The daily intake of Soybean germ oil thus appears effective for lessening serum TC and LDL-C in human subjects.

L2 ANSWER 9 OF 37 CAPLUS COPYRIGHT 2003 ACS

2001:493050 Document No. 136:211188 Using natural genes to improve soybean quality. Wilcox, James R. (Crop Production and Pathology Research, USDA, Agricultural Research Service, West Lafayette, IN, 47907-1150, USA). Dealing with Genetically Modified Crops, [Symposium], San Diego, CA, United States, Apr. 25-28, 2000, Meeting Date 2000, 52-59. Editor(s): Wilson, Richard F.; Hou, Ching T.; Hildebrand, David F. AOCS Press: Champaign, Ill. (English) 2001. CODEN: 69BLUR.

AB A review. The cultivated soybean contains a wealth of naturally occurring variability that can be used to improve compositional traits of this crop. This genetic variability has been used primarily to increase protein accumulation in soybean. Closely related perennial species of Glycine expand the variability available to plant breeders to include traits such as the absence of trypsin inhibitors. Perennial soybean species are a crucial resource for unique traits, and expanded research efforts are

needed to capitalize on this genetic resource. When needed variability for economically important traits is not readily available, soybean breeders have created mutations for these traits within the soybean genome. Modifications in fatty acid compn. of soy oil and creation of low-phytate, low peroxidase and low-lipoxygenase soybean germ plasms are examples of successful mutation breeding. These genetic changes within the soybean genome are readily accepted by the soybean industry and by consumers and can ensure the continued profitability of soybean products.

- L2 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2003 ACS
2001:461371 Document No. 136:52973 Study on isolation and purification method for soy saponin and isoflavone from substance extracted by methanol from soybean germ. Wang, Haibo; Liu, Dachuan (Wuhan Industry College, Wuhan, 430022, Peop. Rep. China). Shipin Kexue (Beijing), 22(4), 40-44 (Chinese) 2001. CODEN: SPKHD5. ISSN: 1002-6630. Publisher: Zhongguo Shipin Zazhishe.
- AB The isolation and purifn. methods for soy saponin and isoflavone from substance extd. by methanol from soybean germ were introduced. The results of the detn. methods including org. solvent depositing and different chromatog. column (silica gel column, polyamide column, sephadex G-25 column) were compared. The results showed that polyamide column, sephadex G-25 column were suitable to isolate and purify for soy saponin and isoflavone.
- L2 ANSWER 11 OF 37 CAPLUS COPYRIGHT 2003 ACS
2001:444364 Document No. 135:32819 Fermentative manufacture of proteinases. Sugiyama, Toyoko; Kadota, Hanzo (Oto Corporation K. K., Japan; Fujimi Yohoen K. K.). Jpn. Kokai Tokkyo Koho JP 2001161298 A2 20010619, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-376550 19991210.
- AB Wheat germ, soybean germ, and/or rice germ, which is defatted by supercrit. extn., is steamed at 50-150.degree. or steamed after roasting at 50-150.degree. and fermented with koji mold and/or yeast to give proteinases, useful for foods for treatment of life style-related diseases, etc. Defatted rice germ, wheat germ, soybean germ, and sesame were steamed at 110.degree. for 3 h, fermented with koji at 30.degree. for 48 h, and dried to moisture content 5-8% to give proteinase at 45,571 .mu.g-tyrosine/h/g-koji.
- L2 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2003 ACS
2001:443393 Document No. 135:370849 Extraction and identification of soyasaponin B from soy germ. Gu, Liwei; Gu, Wenyi; Tao, Guanjun (Food College, Wuxi University of Light Industry, Wuxi, 214036, Peop. Rep. China). Zhongguo Liangyou Xuebao, 16(2), 37-40 (Chinese) 2001. CODEN: ZLXUFO. ISSN: 1003-0174. Publisher: Zhongguo Liangyou Xuebao Bianjibu.
- AB Two soyasaponins were isolated from soyasaponin group B with preparative HPLC. Their structures were confirmed with UV, IR, ESI/MS, ¹H¹³C DEPT NMR as soyasaponin Ba and Bb. It revealed ESI/MS was highly sensitive and accurate for structural elucidation of saponin.
- L2 ANSWER 13 OF 37 CAPLUS COPYRIGHT 2003 ACS
2001:328735 Document No. 134:325318 Manufacture of isoflavone aglycons from soybean extracts with Rhodotorula glutinis. Sung, Tae Kyung; Park, Goon Sik; Kim, Beum Hwan; Ahn, Se, Chun; Choi, Gil Young; Do, Moo Hoe (Shin Dong Bang Corporation, S. Korea). Jpn. Kokai Tokkyo Koho JP 2001120294 A2 20010508, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-161251 20000530. PRIORITY: KR 1999-47744 19991030.
- AB Isoflavone aglycons, e.g. genistein, glycitein, and daidzein, useful for prevention of hypertension, osteoporosis, breast cancer, prostatic cancer, menopausal disorders, etc., are manufd. by culturing R. glutinis (KCCM-10172), isolated from misodama-koji, with soybean or soybean germ ext. The cultivation is preferably carried out at pH 4.0-8.0 and 32-35.degree. for 30-54 h. During the culture, .gtoreq.20% of dissolved oxygen concn. at the early stage should be maintained. R.

glutinis (KCCM-10172) was shake-cultured in a hot water ext. of soybean or soybean germ at 30.degree. and pH 5.0 for 6 days to give 48.0 mg/mL aglycons.

L2 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2003 ACS

2001:230853 Document No. 135:18759 Chemical composition of soybean oil extracted from hypocotyl-enriched soybean raw material and its cholesterol lowering effects in rats. Ozawa, Yoichi; Sato, Hitoshi; Nakatani, Akihiro; Mori, Osamu; Hara, Yoshiko; Nakada, Yuji; Akiyama, Yukio; Morinaga, Yasushi (Food Research & Development Laboratories, Ajinomoto Co., Inc., Kawasaki, 210-8681, Japan). Journal of Oleo Science, 50(4), 217-223 (English) 2001. CODEN: JOSOAP. ISSN: 1345-8957. Publisher: Japan Oil Chemists' Society.

AB Soybean oil (termed **Soybean-germ** oil to distinguish it from normal soybean oil) was extd. from hypocotyl-enriched (37%) soybean raw material and its chem. compn. was analyzed. The total sterol content in **soybean-germ** oil was 1.7% which is higher than that in soybean oil (0.4%), corn oil (1.1%) and rice bran oil (1.0%). The ratio of campesterol to the total sterols of **soybean-germ** oil was 8.1% that was lower than those of soybean oil (20.2%), corn oil (20.5%) and rice bran oil (15.7%), resp. The sum of . Δ .7-stigmastenol, . Δ .7-avenasterol and citrostadienol in **soybean-germ** oil was 517 mg/100 g which was higher than in corn oil (30 mg) and rice bran oil (230 mg), resp. Its cholesterol lowering effects in rats were evaluated. Between the rats fed test feeds contg. 0.5% cholesterol and 10% test oils, the increases in the serum and liver cholesterol levels were more suppressed in the rats fed **Soybean-germ** oil than in those fed soybean oil. The higher sterol content in **Soybean-germ** oil may be related to its enhanced cholesterol lowering effects.

L2 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2003 ACS

2000:782161 Document No. 134:236453 Optimum extraction conditions for soyasaponin and isoflavone glycoside from **soybean germ**. Liu, Dachuan; Wang, Haibo (Wuhan Industry College, Wuhan, 430022, Peop. Rep. China). Shipin Kexue (Beijing), 21(10), 28-31 (Chinese) 2000. CODEN: SPKHD5. ISSN: 1002-6630. Publisher: Zhongguo Shipin Zazhishe.

AB The extn. conditions for soyasaponin and isoflavone glycoside from **soybean germ** were studied. The optimum extn. solvent and conditions (extn..time 3 h, temp. 60.degree.C, solvent 90%, solvent: **soybean germ** = 1:16) were found effective for extn. of soyasaponin and isoflavone glycoside from **soybean germ**. By the orthogonal test, the optimum extn. conditions were confirmed.

L2 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2003 ACS

2000:772409 Document No. 133:321224 Enriched food spreads containing phytoestrogens. Chen, Mandy Kim; Patrick, Matthew; Reddy, Podutoori R. (Unilever N.V., Neth.; Unilever PLC; Hindustan Lever Ltd.). PCT Int. Appl. WO 2000064276 A2 20001102, 28 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO 2000-EP3725 20000425. PRIORITY: US 1999-299778 19990426.

AB A water-in-oil spread includes phytoestrogens, preferably isoflavones. It can be expected that the reported beneficial health effects of phytoestrogens may be enjoyed by the consumer by consuming the spread. The spreads of the invention have good taste, notwithstanding the presence of the often-bitter tasting isoflavones. The spread may be an emulsion comprising added phytoestrogens and at least 0.25 wt. % of calcium (e.g., calcium moiety of a calcium salt), esp. at least 0.5 wt. % of calcium.

The spread may be an emulsion comprising phytoestrogens and one or more, preferably at least two, of the following vitamins: D, E, B6 and B12. The spread also preferably includes elevated levels of calcium and/or magnesium. The spread may also be provided with a level and type of triglycerides such that at least 5 wt. % polyunsatd. fatty acid moieties are present (based on the total wt. of the spread) to provide consumers with access to both of these substances in a beneficial food form. Thus, a spread (oil-water phase ratio 4:6) may contain soybean germ flour 2.86, tricalcium phosphate 1.88, and vitamin mix (B6, B12, E) 0.07% plus other constituents.

L2 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2003 ACS

2000:585879 Document No. 133:149283 Bioconversion method of selenium and zinc by utilizing beneficial bacterium. Wu, Bingxin; Sun, Xiaolin; Wang, Zehzhou (Jinan Sanzhu Pharmaceutical Co., Ltd., Peop. Rep. China). Faming Zhuanli Shengqing Gongkai Shuomingshu CN 1237636 A 19991208, 5 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1998-101995 19980528.

AB The method comprises adding 0.5% activated *B. breve*, *L. delbruckii*, and *E. faecalis* to 1,000 mL culture medium, and fermenting at 38.degree. for 24 h. The culture medium is composed of soybean germ protein liquor 100, protease 5, glucose 1.5, yeast ext. 0.6, sugar 3, Na₂SeO₃ 0.001-0.01, and ZnSO₄ 0.01-0.04 part. *B. breve* is activated by culture in BS culture medium at 38.degree. for 18 h. *L. delbruckii* is activated by culture in LC culture medium at 38.degree. for 5 h. *E. faecalis* is activated by culture in EC culture medium at 38.degree. for 12 h.

L2 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2003 ACS

2000:281161 Document No. 132:264473 Preparation of multifunctional nutritive liquid. Wu, Bingxin; Dong, Lishan (Sanzhu Pharmaceutical Co., Ltd., Ji'nan, Peop. Rep. China). Faming Zhuanli Shengqing Gongkai Shuomingshu CN 1227727 A 19990908, 15 pp. (Chinese). CODEN: CNXXEV. APPLICATION: CN 1998-100876 19980302.

AB The liq. contains water ext. of chinese medicinal herb 5-15, hydrolyzate of animal tissues 13- 23, protein of soybean germ 50-80 part, trace element compd., flavoring agent, and fermented mixed liq. The raw material of the liq. is composed of dangshen-40-60, Lycium barbarum 5-15, mulberry 5-15, dazao 10-30, beef 20-30, animal lien 35-45, animal encephalon 8-18, bifidobacterium 0.1-5, lactobacillus 0.1-5, yeast 0.01-0.5, soybean germ 200-400, trypsin 0.1-10, Na₂CO₃ 0.03-1, microelement compd. 0.001- 0.1, flavoring agent 4-50 part. The microelement compd. contains ZnSO₄, and the flavoring agent contg. sugar and honey. The manufg. process was also given.

L2 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2003 ACS

1999:571853 Document No. 131:180809 Positional cloning of brown stem rot resistance genes in soybeans. Webb, David M. (Pioneer Hi-Bred International, Inc., USA). U.S. US 5948953 A 19990907, 8 pp., Cont.-in-part of U.S. 5,689,035. (English). CODEN: USXXAM. APPLICATION: US 1997-876103 19970613. PRIORITY: US 1995-534091 19950926.

AB A method for introgressing brown stem rot (BSR) resistance into elite soybean germ plasm is disclosed. The method involves using a genetically mapped locus assoccd. with BSR resistance for marker-assisted selection during introgression of BSR resistance into elite soybean germ plasm. Also disclosed are a method for confirming selection for BSR resistance; a quant. trait locus assoccd. with BSR resistance; and soybean lines bred to be resistant to BSR infestation.

L2 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2003 ACS

1999:468179 Document No. 131:87177 Isolation of germ soybeans containing high concentration of isoflavones. Kim, Bum-Hwan; Choi, Gil-Young; Do, Moo-Hoe (Sin-Dong-A Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11196803 A2 19990727 Heisei, 4 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP

- AB 1998-79735 19980326. PRIORITY: KR 1997-69326 19971216.
A schematic mech. process for isolating germ soybeans contg. high concn. of isoflavones is presented with a diagram. The skin of soybeans are removed mech., and the mixt. contg. 40-70 % soybean germs and the soybean skin are sep'd. on the basis of d.
- L2 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2003 ACS
1999:365596 Document No. 131:18275 .gamma.-Aminobutyric acid-enriched soybean-based foods, their manufacture, and manufacture of .gamma.-aminobutyric acid. Murakami, Taro; Okada, Tadashi; Murai, Hiromichi; Ueno, Shigenori; Tsuritani, Masataka; Kawazumi, Toshiyuki (Wakamoto Pharmaceutical Co., Ltd., Japan; Oriza Yuka K. K.). Jpn. Kokai Tokkyo Koho JP 11151072 A2 19990608 Heisei, 5 pp. (Japanese). CODEN: JKXXXAF. APPLICATION: JP 1997-334802 19971120.
- AB Title foods, which show antihypertensive effect, are manufd. by adding H₂O to .gtoreq.1 materials chosen from soybean with or without germ, **soybean germ**, and their defatted products at pH 1.5-12 and .ltoreq.60.degree. and stirring them at .ltoreq.60.degree.. .gamma.-Aminobutyric acid (I) is manufd. from the foods by extn. with H₂O followed by purifn. by ion exchange chromatog. **Soybean germ** was treated with aq. AcOH (pH 5) at 40.degree. for 4 h to result in I content 116 mg/100 g.
- L2 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2003 ACS
1999:114906 Document No. 130:337460 Microbial transformation of **soybean germ** components to antioxidative isoflavonoids. Mimura, Akio; Yazaki, Shinichi (Department of Applied Chemistry and Biotechnology, Yamanashi University, Kofu, 400-8511, Japan). Daizu Tanpakushitsu Kenkyu, 1, 46-51 (Japanese) 1998. CODEN: DTKEFV. ISSN: 1344-4050. Publisher: Fuji Tanpakushitsu Kenkyu Shinko Zaidan.
- AB Soybean is rich in isoflavonoid glycosides such as daidzin and genistin, esp. in the part of germ. During the fermn. by microorganisms to produce traditional fermented foods such as miso (soybean paste), soy sauce, natto and tempeh, there isoflavonoid glycosides can be hydrolyzed to aglycon isoflavonoids, and further transformed to biol. active compds. Aspergillus niger IFO 4414 was cultivated in the medium composed of **soybean germ** ext. rich in isoflavonoid glycosides, and it was obsd. that antioxidative activity, superoxide dismutase(SOD) like activity and anti-tumor promoting activity were increased remarkably during the fermn. In the previous paper, the authors reported that one of the transformed products from daidzin was 4',7,8-trihydroxyisoflavone (8-hydroxydaidzein) with potent antioxidative and anti-UVB activities. From the chromatog. expts., it was considered that in the fermented broth there have been produced of the isoflavonoids with potent antioxidative, SOD like and anti-tumor promoting activities.
- L2 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2003 ACS
1998:116863 Document No. 128:204347 Effect of soybean trypsin inhibitor and isoflavone on chemically induced skin tumor in mice. Miyagi, Chika; Shinjo, Sumie; Miyagi, Yuko; Kuba, Megumi; Touma, Mika; Wang, Ming-Fu; Takamatsu, Kiyoharu; Yamamoto, Takashi; Yamamoto, Shigeru (Faculty of Medicine, University of the Ryukyus, Okinawa, 903-01, Japan). Daizu Tanpakushitsu Kenkyukai Kaishi, 18, 112-119 (Japanese) 1997. CODEN: DTKKEE. ISSN: 0919-9535. Publisher: Daizu Tanpakushitsu Kenkyukai.
- AB Isoflavones and trypsin inhibitor are anti-carcinogenic substances of soybean. The effects of soybean isoflavones and trypsin inhibitor on chem. induced skin tumors were studied in hairless mice. The mice were fed control diet (free of isoflavones and trypsin inhibitor), soybean protein isolate diet (isoflavones 60 mg/100 g, trypsin inhibitor 459 U/100 g), whey diet (isoflavones 56 mg/100 g, trypsin inhibitor 1448 U/100 g), or **soybean germ** diet (isoflavones 37 mg/100 g) for 24 wk. On the 7th day on the diet, the tumor initiator 7,12-dimethylbenzanthracene was applied on the back of the mice. One week later, the tumor promoter phorbol-12-myristate-13-acetate was applied on

the same area twice weekly until the end of the study. The tumors >1 mm in diam. were excised and weighed. In the second expt., the mice were fed control diet (isoflavones and trypsin inhibitor free), 2% germ diet (isoflavones 15 mg/100 g), 5% germ diet (isoflavones 38 mg/100 g), or whey diet (trypsin inhibitor 1440 U/100 g) for 16 wk. The effects of isoflavones and trypsin inhibitor on skin tumors were not statistically significant. The anti-carcinogenic effects of soybean components varies in a complex way depending on the combination and concn. of isoflavones and trypsin inhibitor.

L2 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2003 ACS

1997:437383 Document No. 127:61670 General situation on screening methods for aluminum tolerance in **soybean germ-plasm**. Nian, Hai; Lu, Yonggen (Agronomy Dep., South China Agric. Univ., Canton, 510642, Peop. Rep. China). Huanan Ligong Daxue Xuebao, Ziran Kexueban, 24(Suppl.), 138-143 (Chinese) 1996. CODEN: HLDKEZ. ISSN: 1000-565X. Publisher: Huanan Ligong Daxue Xuebao Bianji Weiyuanhui.

AB A review with 21 refs. Al in the soil is a severe crop growth limiting factor in acid soils. Soybean gene types differ widely in tolerance to aluminum toxicity and these differences are genetically controlled. Problems of Al toxicity can be reduced or prevented by selecting or breeding gene types with greater tolerance to aluminum toxicity. Several screening methods for aluminum tolerance used in soybeans were reviewed. These included field screening, green house screening with soil, rapid screening with soln., screening with nutrition solns., and tissue culture screening. The advantages and disadvantages and relations among these screening methods were discussed and compared. It was suggested that selections and screening for Al tolerance **soybean germ**-plasm should be centered on germ-plasm from areas reputed to have low pH soils and field screening should be the most basic method.

L2 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2003 ACS

1997:170213 Document No. 126:261633 Genetic diversity for restriction fragment length polymorphism (RFLP) markers within soybean (*Glycine max* L. Merr.) germ plasm and its use as a selection criterion for parents in a breeding program. Kisha, Theodore James (Michigan State Univ., East Lansing, MI, USA). 100 pp. Avail. Univ. Microfilms Int., Order No. DA9706508 From: Diss. Abstr. Int., B 1997, 57(9), 5397 (English) 1996.

AB Unavailable

L2 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2003 ACS

1992:486768 Document No. 117:86768 Proliferating cell nuclear antigen (PCNA/cyclin) in plant proliferating cells: immunohistochemical and quantitative analysis using autoantibody and murine monoclonal antibodies to PCNA. Daidoji, Hideyuki; Takasaki, Yoshinari; Nakane, Paul K. (Sch. Med., Juntendo Univ., Tokyo, 113, Japan). Cell Biochemistry and Function, 10(2), 123-32 (English) 1992. CODEN: CBFUDH. ISSN: 0263-6484.

AB Proliferating-cell nuclear antigen (PCNA), also known as cyclin, is synthesized in proliferating cells and recently was identified as DNA polymerase-delta auxiliary protein. The assocn. of PCNA to the proliferative cells of plants was analyzed using both autoantibodies to PCNA obtained from a patient with systemic lupus erythematosus (SLE) and murine monoclonal antibodies. By immunohistochem. anal., nuclei of cells around the growing point in soybean root tips reacted strongly with autoantibodies to PCNA in the serum from a patient with SLE. The plant PCNA in root tip cells was purified by ammonium sulfate fractionation, DEAE chromatog., and affinity chromatog. The partially purified plant PCNA was tested by immunoblotting and a 34 kD polypeptide reacted with both the human anti-PCNA autoantibody and a mouse monoclonal antibody against human PCNA (TOB 7). In addn., the purified plant PCNA reacted with both antibodies in ELISA. The binding of anti-PCNA serum to the animal PCNA was blocked by the plant PCNA in this ELISA. The assocn. of PCNA with growing cells in plants was further confirmed by quant. sandwich type ELISA using two murine monoclonal antibodies to PCNA, TOB7 and TO17.

Those results suggested that PCNA in both plant and animal cells had the same immunol. and biochem. characteristics and the plant PCNA might play an important role in cell growth, existing as it does in proliferating plant cells. The concn. of PCNA in soybean germ ext. before germination was less than 5 ng mL⁻¹ (protein concn., 6-8 mg mL⁻¹), but that of the root tip stem including the growing point increased to 887 ng mL⁻¹ (protein concn. 3.8 mg mL⁻¹) in the second day after germination.

L2 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2003 ACS

1991:468180 Document No. 115:68180 Hydrogen oxidation by the host-controlled uptake hydrogenase phenotype of *Bradyrhizobium japonicum* in symbiosis with soybean host plants. Van Berkum, Peter; Sloger, Charles (Soybean Alfalfa Res. Lab., Agric. Res. Serv., Beltsville, MD, 20705, USA). Applied and Environmental Microbiology, 57(6), 1863-5 (English) 1991. CODEN: AEMIDF. ISSN: 0099-2240.

AB Symbioses between uptake hydrogenase host-regulated (Hup-h) phenotypes of *B. japonicum* and exotic, agronomically unadapted soybean germ plasm were examd. for expression of uptake hydrogenase activity. Detns. for H₂ evolution and uptake hydrogenase activity identified 5 plant introduction (PI) lines which formed H₂-oxidizing symbioses with strains USDA 61 and PA3 6c. Hup-h strains belonging to serogroup 94 expressed uptake hydrogenase activity in symbioses with PI 181696 and PI 219655 at rates sufficient to prevent H₂ from escaping the nodules. The identification of soybean germ plasm forming H₂-oxidizing symbioses with Hup-h bradyrhizobia potentially has implications for enhancing N fixation efficiency in soybean prodn.

L2 ANSWER 28 OF 37 CAPLUS COPYRIGHT 2003 ACS

1990:18957 Document No. 112:18957 Fatty acid composition of oil from soybean seeds grown at extreme temperatures. Rennie, B. D.; Tanner, J. W. (Crop Sci. Dep., Univ. Guelph, Guelph, ON, N1G 2W1, Can.). JAOCs, J. Am. Oil Chem. Soc., 66(11), 1622-4 (English) 1989. CODEN: JJASDH.

AB Temp. during seed development influences the level of the various fatty acids in soybean (*Glycine max*) oil. To det. the range of values that can be obtained for each fatty acid, five lines (A5, C1640, N78-2245, PI 123440, and PI 361088B) with low linolenic acid (18:3) levels, one line (A6) with a high stearic acid (18:0) level, and 2 cultivars (Century and Maple Arrow) were grown at 40/30, 28/22, and 15/12.degree. day/night. At 40/30.degree., high oleic acid (18:1), low linoleic acid (18:2), and low linolenic acid levels were obtained that were beyond the range of levels reported for the soybean germ plasm. The linolenic acid levels for A5, C1640, and N78-2245 grown at 40/30.degree. were <2.0%, and are the lowest values reported for soybean oil. A6 displayed a high level of stearic acid at 28/22 and 40/30.degree. but displayed a relatively low level at 15/12.degree.. Thus, temp. may affect the expression of the fasa allele, which is responsible for high stearic acid levels in A6. The linolenic acid levels of PI 361088B and C1640, both possessing the fan allele, were the lowest for all lines grown at 15/12.degree.. Therefore, the fan allele is an appropriate source for the development of low linolenic acid lines adapted to cool areas.

L2 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2003 ACS

1989:92225 Document No. 110:92225 Genetic analysis of mannose-6-phosphate isomerase in soybeans. Chiang, Y. C.; Kiang, Y. T. (Dep. Plant Sci., Univ. New Hampshire, Durham, NH, 03824, USA). Genome, 30(5), 808-11 (English) 1988. CODEN: GENOE3. ISSN: 0831-2796.

AB Five mannose-6-phosphate isomerase (EC 5.3.1.8) variants were obsd. electrophoretically in cultivated soybeans (*Glycine max*) and wild soybeans (*G. soja*). Four of the 5 variants differed in the mobility of the 2 mannose-6-phosphate isomerase bands obsd., whereas the 5th showed no enzyme activity. Several crosses involving different variants were made in order to study inheritance of the obsd. variants. The inheritance data showed that the 5 variants were allelic and controlled by a single locus (Mpi). The 5 alleles were as follows: Mpi-a (Rf 0.61 and 0.66); Mpi-b (Rf

0.66 and 0.7); Mpi-c (Rf 0.71 and 0.75); Mpi-d (Rf 0.76 and 0.80); and mpi. Mpi-a, Mpi-b, Mpi-c, and Mpi-d are codominant, and the null allele mpi is recessive. The Mpi-b allele is most common while the Mpi-d and mpi alleles are rare in both the cultivated and wild soybean germ plasma from the various sources examd.

L2 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2003 ACS

1987:595041 Document No. 107:195041 Regulation of linolenic acid in soybeans and gene transfer to high yielding, high protein germplasm. Wilson, R. F.; Burton, J. W. (Agric. Res. Serv., USDA, Raleigh, NC, 27695-7620, USA). Proc. - World Conf. Emerging Technol. Fats Oils Ind., Meeting Date 1985, 386-91. Editor(s): Baldwin, A. Richard. Am. Oil Chem. Soc.: Champaign, Ill. (English) 1986. CODEN: 56DPAV.

AB Results of a study using soybean genotypes N78-2245 and PI 123440 and the cultivar Essex mated in all possible 2-way combinations, including reciprocals and self-matings, indicate at least 2 genetic systems for the regulation of linolenic acid (C18:3) in soybeans. One of these primarily governs C18:1 desatn. and appears to operate through the maternal plant. A 2nd mechanism primarily acts on C18:2 desatn. and is controlled by the genotype of the embryo. These genetic systems are manifested in the lines N78-2245 and PI 123440, resp. As a 1st approxn., the data support a proposed model for genetic regulation of C18:3 in soybeans and contend that 2 major gene loci mediate the low C18:3 trait. The involvement of addnl. loci having smaller effects is not excluded.

L2 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2003 ACS

1985:111879 Document No. 102:111879 A safe preparation of vitamin C. Suwa, Yoshihide; Kobayashi, Takumi; Kiyota, Noriko; Yoshizumi, Hajime (Suntory, Ltd., Japan). Eur. Pat. Appl. EP 129032 A2 19841227, 16 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1984-105034 19840504. PRIORITY: JP 1983-105609 19830613; JP 1983-160880 19830901.

AB Catalase [9001-05-2] or plant germ (e.g. wheat germ, rice germ) removes the mutagenicity caused by combining ascorbic acid [50-81-7] with beverages, tobacco, or Cu+. Thus, the mutagenicity of 100 .mu.L coffee beverage (as detd. with *Salmonella typhimurium*) was considerable enhanced by addn. of 500 .mu.g ascorbic acid. The mutagenicity was almost completely abolished by adding barley malt at 3 mg.

L2 ANSWER 32 OF 37 CAPLUS COPYRIGHT 2003 ACS

1983:591670 Document No. 99:191670 Variation in the low molecular weight proteinase inhibitors of soybeans. Stahlhut, R. W.; Hymowitz, T. (Dep. Agronomy, Univ. Illinois, Urbana, IL, 61801, USA). Crop Science, 23(4), 766-9 (English) 1983. CODEN: CRPSAY. ISSN: 0011-183X.

AB Sepn. and purifn. of the Bowman-Birk type inhibitors in soybean seeds and screening for variants in the USDA Named Cultivar and Type Collections, was carried out. Five Bowman-Birk type inhibitors were sepd. from Amsoy 71 by anion exchange column chromatog. Soybean accessions were screened electrophoretically for variants of the inhibitors. Three variants were identified: (1) lines which appear to be missing fraction III electrophoretic band (F phenotype); (2) lines which appear to be missing fraction V electrophoretic band (S phenotype); and (3) lines in which both electrophoretic bands are present (SF phenotype). Most lines (71%) have the SF banding pattern. The S or F banding patterns are less common with only 26 and 3%, resp., of the lines screened.

L2 ANSWER 33 OF 37 CAPLUS COPYRIGHT 2003 ACS

1981:423125 Document No. 95:23125 Two soybean genotypes lacking lipoxygenase-1. Hildebrand, D. F.; Hymowitz, T. (Dep. Agron., Univ. Illinois, Urbana, IL, 61801, USA). JAOCs, J. Am. Oil Chem. Soc., 58(5), 583-6 (English) 1981. CODEN: JJASDH.

AB The U.S. Department of Agriculture soybean germ plasm collection (6499 accessions) was screened for genotypes with greatly reduced or missing lipoxygenase [9029-60-1] isoenzymes 1 (L-1), 2 (L-2),

and 3 (L-3). The L-1 assay used linoleic acid dispersed in Tween-20 at pH 9.0 as the substrate and the L-2 and L-3 assays used linoleic acid Me ester dispersed in EtOH at pH 7.0 as the substrate. The spectrometric assay based on conjugated diene formation at 234 nm was used in the qual. screening procedure. Two plant introductions, 133226 from Indonesia and 408251 from Korea, lacked L-1 activity. O uptake, electrophoresis, and isoelec. focusing confirm the lack of detectable L-1 activity in the seed of these 2 genotypes. Radial diffusion against soybean seed lipoxygenase antiserum showed that the 2 genotypes are missing a precipitin band that normal soybean genotypes and purified lipoxygenase from soybean seed exhibit. Neither the L-1 variants nor any other accessions tested had greatly reduced activity with the ester assay.

L2 ANSWER 34 OF 37 CAPLUS COPYRIGHT 2003 ACS
1981:170990 Document No. 94:170990 Chemical germplasm investigations in soybeans: the flotsam hypothesis. Hymowitz, Theodore (Dep. Agron., Univ. Illinois, Urbana, IL, 61801, USA). Recent Advances in Phytochemistry, 14(Resour. Potential Phytochem.), 157-79 (English) 1980. CODEN: RAPHBE. ISSN: 0079-9920.

AB A review with 103 refs. The origins, domestication, and chem. compn. of soybeans, esp. seed lectins, the trypsin inhibitor, and .beta.- amylase, are discussed. The flotsam hypothesis attempts to explain the presence of certain chems. in cultivated varieties, which may have had survival value in wild varieties, but have no such apparent value now.

L2 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2003 ACS
1981:136286 Document No. 94:136286 Soybean seed protein electrophoresis profiles from 15 Asian countries or regions: hypotheses on paths of dissemination of soybeans from China. Hymowitz, T.; Kaizuma, N. (Dep. Agron., Univ. Illinois, IL, USA). Economic Botany, 35(1), 10-23 (English) 1981. CODEN: ECBOA5. ISSN: 0013-0001.

AB Soybean (*Glycine max*) seed protein exts. from 1603 accessions obtained from 15 Asian countries or regions (not including Japan) were analyzed for the presence of alleles of 2 proteins. Three alleles of the Kunitz trypsin inhibitor or SBTI-A2 designated as Tia, Tib, and Tic are electrophoretically distinguishable. The Sp1 seed protein or .beta.-amylase has 2 alleles designated Sp1a and Sp1b which are electrophoretically distinguishable. About 94% of the soybean accessions had the Tia allele. Two accessions from Korea, P.I. 157440 and P.I. 196168, do not have the SBTI-A2 protein (ti). Two accessions, one from Pakistan and the other from Korea, were identified as having the Tic allele. Only the Korean and central Indian soybean populations have a high frequency for the Tib allele. Within Korea, the soybeans from those districts that lie closest to Japan have a high frequency for the Tib allele whereas the soybeans from those districts that lie closest to China have a low frequency for the Tib allele. The Tib allele is not present in soybeans from the Philippines, Vietnam, Thailand, Malaysia, Burma, Nepal, Pakistan, and Afghanistan. Only 1 accession each from Taiwan and Indonesia have the Tib allele. The Sp1a allele is not present in soybeans from Taiwan, Vietnam, Thailand, Malaysia, Indonesia, Burma, Pakistan, and Afghanistan. The highest frequency for the Sp1a allele occurs in soybean germ plasm from northern India and Nepal. The soybeans from Asia (including Japan) were divided into 3 gene centers, primary, secondary, and tertiary, contg. 7 germ plasm pools. Paths of dissemination of the soybean from China to the rest of Asia were developed based upon a combination of electrophoretic data and available historical, agronomic, and biogeog. literature.

L2 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2003 ACS
1958:89468 Document No. 52:89468 Original Reference No. 52:15766e-f Influence of soya flour on bread doughs. III. Distribution of the papain-inhibiting factor in soybeans. Learmonth, E. M. (Brit. Soya Products Ltd., London). Journal of the Science of Food and Agriculture, 9, 269-73 (Unavailable) 1958. CODEN: JSFAAE. ISSN: 0022-5142.

AB cf. C.A. 46, 9738c. The papain-inhibiting factor of the soybean is concd. almost entirely in the germ. The cotyledon has no inhibitory activity, and sometimes has a slight activating effect. A similar distribution of papain-inhibiting factors exists in other leguminous seeds. Addns. of 0.2-0.4% of raw soybean germ alter the Chopin alveogram of wheat flour in the same sense as do addns. of oxidizing improvers.

L2 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2003 ACS
1950:20086 Document No. 44:20086 Original Reference No. 44:3987h-i,3988a-e Isoflavones from the fresh soybean germ and the synthesis of 6-methylformononetin and 6-methyldaidzein. Bhandari, Prithvi Raj; Bose, Jogendra Lal; Siddiqui, Salimuzzaman (Council of Sci. & Ind. Research, Delhi). Journal of Scientific & Industrial Research, 8B(No. 12), 217-21 (Unavailable) 1949. CODEN: JSIRAC. ISSN: 0022-4456.

AB Freshly germinated soybeans (5 kg.), were dialyzed 4 times (5, 5, 24, 24 hrs., resp.) with 5 l. EtOH at room temp. The combined EtOH solns. deposited some colorless crystals of biochanin C; the EtOH filtrate, concd. in vacuo and kept for a few days, deposited a solid (I), the filtrate from which was extd. with Et₂O, the Et₂O concd., the residue combined with I, and the whole extd. with petr. ether (II). The insol. portion (0.4 g.) on fractionation in alc. gave 0.05 g. less sol. (III), colorless prismatic rods, m. 322-3.degree. (decompn.), and the 0.2 g. more sol. product (IV), prismatic rods, m. 316-17.degree. (from dil. alc.); di-Ac deriv., m. 185.degree.. Hydrolysis of IV with 15% aq. alc. KOH gave p-HOC₆H₄CH₂CO₂H and HCO₂H. IV appears to be identical with tatoin. III and IV were shown to be different by mixed m.p. (302-5.degree.). The Et₂O-insol. material from III and IV was extd. with 50% EtOH; the sol. portion gave 0.1% (based on the wt. of dry grain) of colorless prisms of biochanin C, m. 310.degree. (decompn.). 2,4-(HO)C₆H₃Me (1.1 g.), 1.1 g. 4-NCCH₂C₆H₄OMe, 0.5 g. freshly fused ZnCl₂, and 20 cc. dry Et₂O were satd. with dry HCl at 0.degree., kept cold 2 days, the supernatant liquid decanted, and the residual ketimine-HCl hydrolyzed by refluxing 1 hr. with 110 cc. 1% H₂SO₄ to give 0.9 g. 2,4-dihydroxy-5-methylphenyl 4-methoxybenzyl ketone (V), colorless prismatic rods, m. 139-40.degree. (from dil. MeOH); oxime, colorless needles, m. 165-6.degree. (from dil. MeOH). To 0.3 g. Na dust and 2 cc. dry HCO₂Et (VI) at 0.degree. was added with stirring 0.58 g. V in 12 cc. VI, during 3 hrs., and the mixt. stirred 4 addnl. hrs., kept cold 2 days, and acidified with ice-cold HCl to give 0.12 g. 7-hydroxy-4'-methoxy-6-methylisoflavone (VII), colorless prismatic rods, m. 260.degree. (from alc.). VII (0.07 g.), 0.2 g. pure PhOH, and 8 cc. HI (d. 1.7) cooled after 2 hrs. at 130-40.degree. and poured into 20 cc. H₂O contg. 1 g. NaHSO₃ gave 0.04 g. 4',7-dihydroxy-6-methylisoflavone (VIII), colorless needles, darkens at 310.degree., m. 329-30.degree. (decompn.) (from alc.); di-Ac deriv., colorless prismatic rods, m. 200.degree.. V (0.1 g.), 2 g. freshly fused NaOAc, and 15 cc. Ac₂O refluxed 30 hrs. gave 7-acetoxy-4'-methoxy-2,6-dimethylisoflavone, colorless needles (no m.p. reported); hydrolysis at 0.degree. with ice-cold concd. H₂SO₄, then allowing the mixt. to come to 25.degree. during 10 min., gave the 7-HO compd., colorless needles, m. 257-8.degree. (from alc.).

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